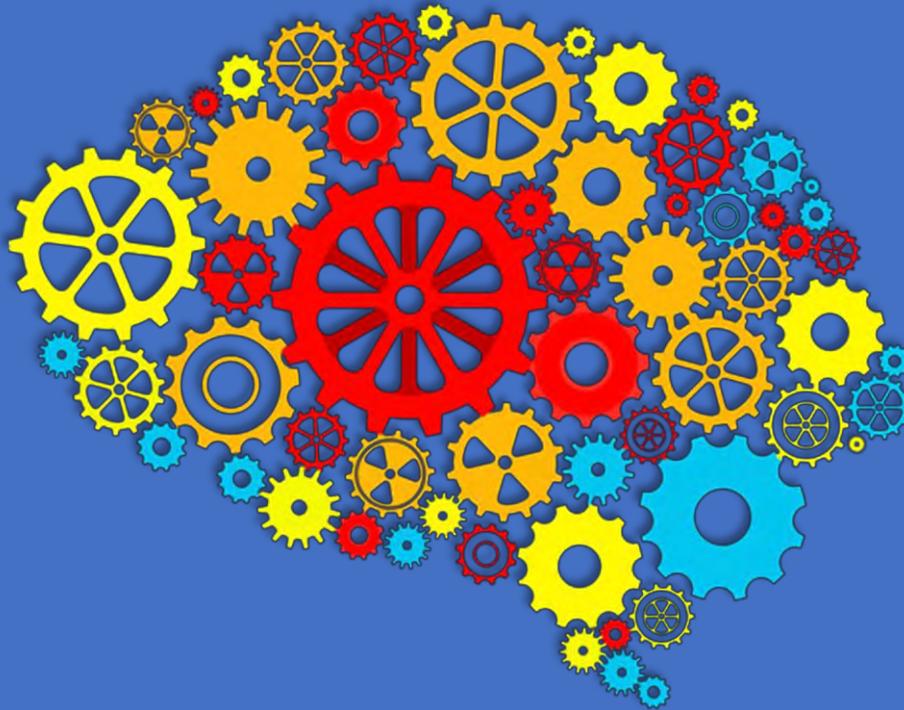


Eidetic – Unlimited Ability of Brain



Training Module for Teachers and Parents



Training module for teachers

- Duration 2 days
- Max. number of participants - 14

Day 1.

Goal of the day: Familiarization with eidetic, as a supplementary educational methodology

Training modules

1. Welcome; introducing of a two-day training program to the participants (10 min).
2. Sharing of participants' expectations for training (10 min).
3. Interactive inquiry: Difficulties faced by children in the educational process (25 min)
4. Introducing the essence of eidetic teaching methodology as of the supplementary strategic method (1 hr.)
 - What is eidetic?
 - How does the eidetic teaching methodology work?
 - Why the eidetic teaching methodology should be used?

Coffee break - 15 min

5. Imagination (duration 30 min)
 - Visualization
 - Association
 - Location

6. Attention and its characteristics (duration 30 min)

- Concentration
- Instant shifting
- Expanding span
- Redistribution
- Productivity

7. The essence of eidetic memory (duration 30 min)

- Techniques for the development of visual, auditory, tactile, gustatory and photographic memory.
- Quick remembering of any kind information

8. Practical work (duration 30 min)

Day 2 Introducing the essence of eidetic teaching methodology as of the supplementary strategic method to parents

Activities of the day

1. Welcome and overview of the previous day material (30 min).
2. Positive thinking and why it is needed (20 min). Creation of positive mental attitude.
3. Enhancement of creative potential. Stimulation of creative thinking and development of intellect (30 min).
4. Practical work - 30 min

Coffee break - 15 min

Introduction of eidetic teaching methodology to parents – duration - 2 hr.

1. Welcome and introducing (10 min).
 2. Presentation of eidetic teaching methodology (55 min).
 - What is eidetic?.
 - How does eidetic teaching methodology work?
 - Benefits of eidetic teaching methodology.
-

-
3. Practical strategies for parents (30 min). Parent and child – which strategies of the eidetic methodology can be used by a parent to help children and facilitate the development of imaginative thinking
 4. Practical cases – (20 min.)



Eidetic Teaching Center

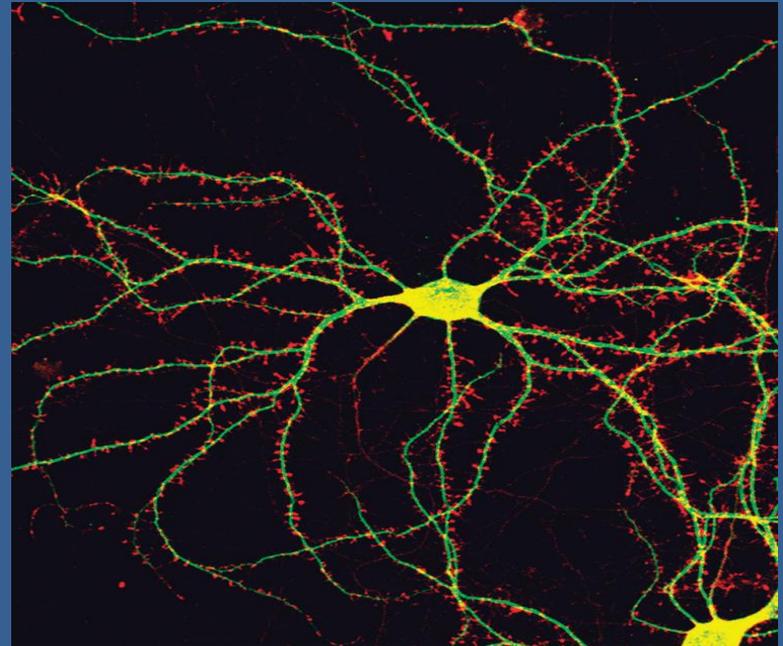
Contact details: Tbilisi, # 68 D. Uznadze str.

Tel. +(99532) 296 74 62, +(99532) 296 11 39, (+995) 577 46 65 71

[www.facebook.com/eitetic teaching center](http://www.facebook.com/eitetic-teaching-center)

E-mail: nana9872001@yahoo.com

“Neuroplasticity” and New approaches in Childhood Education



The latest finding of neuroscientists – “Neuroplasticity” – the ability of a brain to function better, became a ground for developing of better learning potential and new technologies, based on the identification and development of mental abilities.

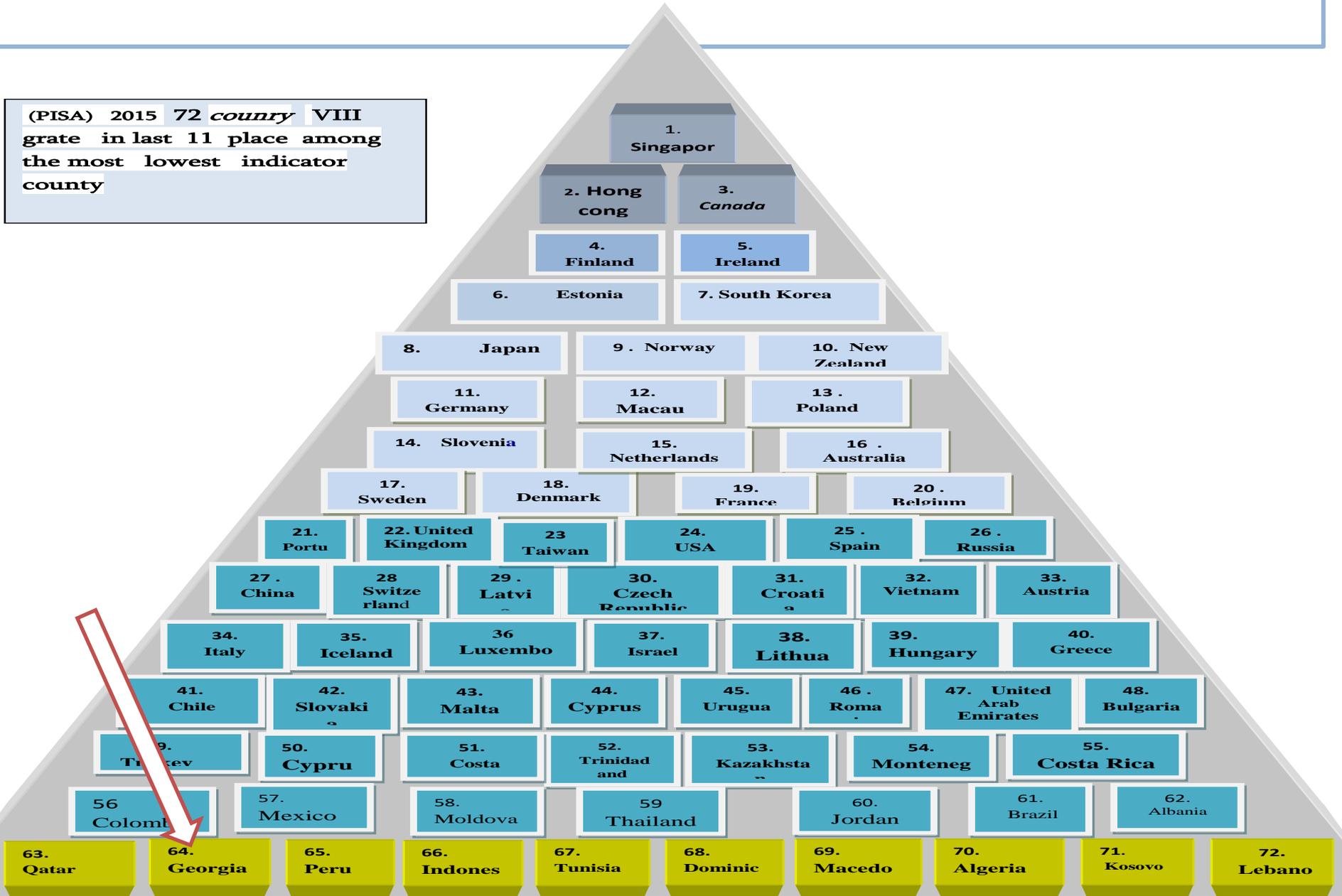
International Student Assessment Tests

Conducted in Georgia

- **“PISA” Program for International Student Assessment**
Triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge Organization for Economic Co-operation and Development - OECD Headquarters Paris Governing in London
- **“TIMSS „ - Trends in International Mathematick and Science. IV- VIII grade children**
- **„PIRLS“- The Progress in International Reading Literacy Study . IV- VIII grade children**

"PISA" Program for International Student Assessment Literacy 2015

(PISA) 2015 72 *country* VIII
 grate in last 11 place among
 the most lowest indicator
 county



➤ **TIMSS** ,, in International Science and Mathematics Achievement in IV-th- grade children 2015

- **TIMSS - International Science** IV grade among 47 Countries Georgia is in the last the 9 place in the most lowest Countries
- **TIMSS - International Science - IV grade** Countries Georgia is in the last the 13 place in the most lowest Countries

SCIENCE-FOURTH GRADE **TIMSS 2015**

International Science Achievement



- Singapore 590
- Korea 589 Japan 569
- Russian Federation 567
- Hong Kong SAR 557
- Chinese Taipei 555 Finland 554
- Kazakhstan 550 Poland 547
- United States 546 Slovenia 543
- Hungary 542 Sweden 540 Norway 538
- England 536 Bulgaria 536 Czech Republic 534
- Croatia 533 Ireland 529 Germany 528 Lithuania 528
- Denmark 527 Canada 525 Serbia 525 Australia 524
- Slovak Republic 520 Northern Ireland 520 Spain 518
- Netherlands 517 Italy 516 Belgium (Flemish) 512 Portugal 508
- New Zealand 506 France 487 Turkey 483 Cyprus 481 Chile 478
- Bahrain 459 Georgia 451 United Arab Emirates 451 Qatar 436
- Oman 431 Iran 421 Indonesia 397 Saudi Arabia 390 Morocco 352 Kuwait 337

TIMSS 2015 Science has achievement results for **47** countries at the fourth grade.

International Mathematics Achievement

East Asian Countries Top Achievers at Fourth Grade in Mathematics

Singapore 618 Hong Kong SAR 615
Korea 608
Chinese Taipei 597 Japan 593

TIMSS 2015 Mathematics has achievement results for **49** countries at the fourth grade.

23

The gap between the East Asian countries and the next highest country was 23 in 2015, unchanged from 2011



- Northern Ireland 570
- Russian Federation 564
- Norway 549 Ireland 547 England 546
- Belgium-Flemish 546 Kazakhstan 544
- Portugal 541 United States 539 Denmark 539
- Lithuania 535 Finland 535 Poland 535
- Netherlands 530 Hungary 529 Czech Republic 528
- Bulgaria 524 Cyprus 523 Germany 522 Slovenia 520
- Sweden 519 Serbia 518 Australia 517 Canada 511 Italy 507
- Spain 505 Croatia 502 Slovak Republic 498 New Zealand 491
- France 488 Turkey 483 Georgia 463 Chile 459 United Arab Emirates 452
- Bahrain 451 Qatar 439 Iran 431 Oman 425 Indonesia 397
- Jordan 388 Saudi Arabia 383 Morocco 377 South Africa 376 Kuwait 353

Assessment conducted by Library Cultural Center GpID 2016v

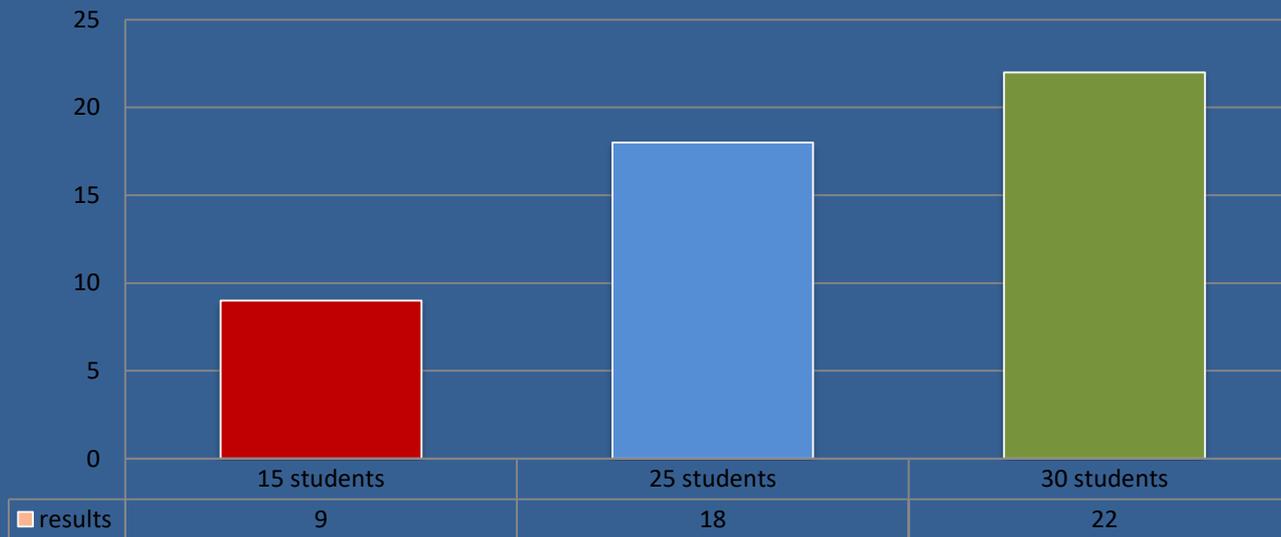
From V classes teacher (24 teacher 500 children)

Achievement of reading abilities .

Form 15 students - 9 can not read at proficient level

From 25 students -18 can not read at proficient level

From 30 students -22 can not read at proficient level



Reading Literacy Study USA ; UK; Canada; Australia

The best way to teach children reading, writing, and Phonemic Awareness

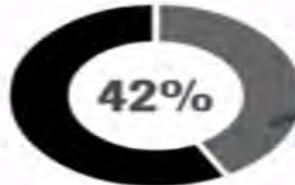


IN US
All Grade 4 students cannot read at a proficient level



CANNOT even achieve reading abilities of the lowest basic level

IN UK



Children left school without achieving a basic level of functional English



Canadians are considered semi-illiterate



all year 5 students CANNOT meet the benchmark literacy skills

2000-2020 US Senate approved the decade of neuroscience studies

2005 by 125 nobelium scientist declare

Priority researches in field of neurobiology and neurophysiology

Biological based of Mind

What kind of Biological rules generate brain to our Cognition

- Brain Initiative 2000-2014 - 3 billion USA \$
- Human Connectome Project 2005 - 100 Million USA \$
University of South California USC
- Blue Brain project - 100 ml EU 2005 --- Swiss - National Brain Institute Prof. Henrey Markram
- Human Brain Project 2012 - 190 Million EU /
- Brain related diseases
- Brainnetome 2013 China - 200 Million

KAVLI PRiCE 2008



2016 laureates (Michael M. Merzenich, University of California *Carla Shatzi*, Carla J. Shatz Stanford University)

By support of local and international funds, equipped by new technologies neuroscientists s work in many direction

➤ Brain related disease

➤ How the learning process works for brain reconstruction and functioning (brain architecture)

➤ Barriers delaying Children development

➤ Solution of biological task of Memory

Brain appeared very plastic
“ NEUROPLASTISITY “-

What represents of foundation of mental abilities and development.

Memory

Attention

Thinking

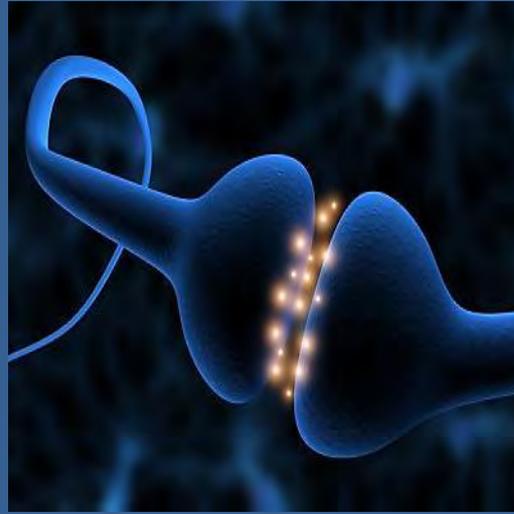
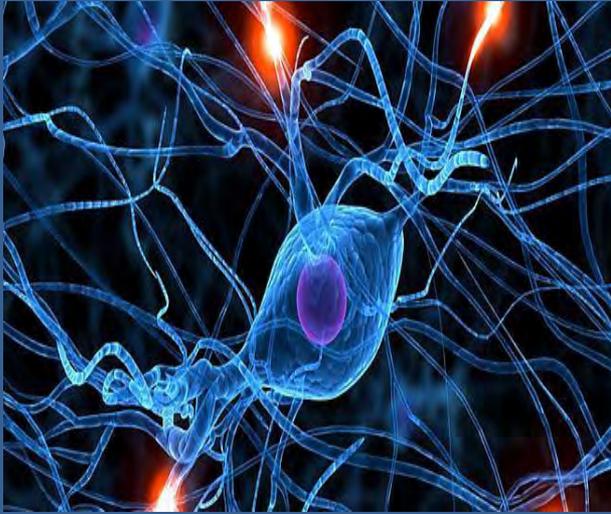
Global Scale Projects and International Studies

The Kavli Foundation started funding of networking University projects in different countries

Laboratories and brain Institutes equipped with highly technological equipment has been established in US, Europe, Australia, China and Japan

Due to the networking, the scientists working on neuroplasticity rapidly collect knowledge and experience in a new direction “Brain-based education”

The main component of brain “Neuron” it is a simple one is. Its became active from outside impulse? Where can you see miracle

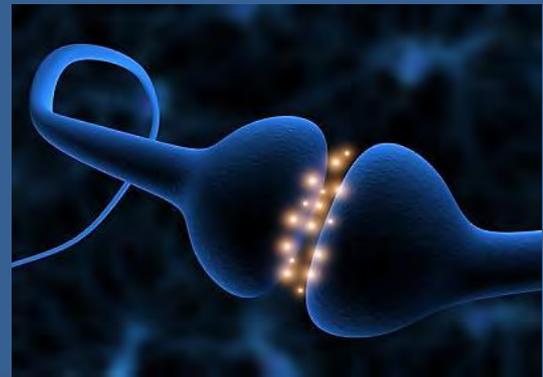
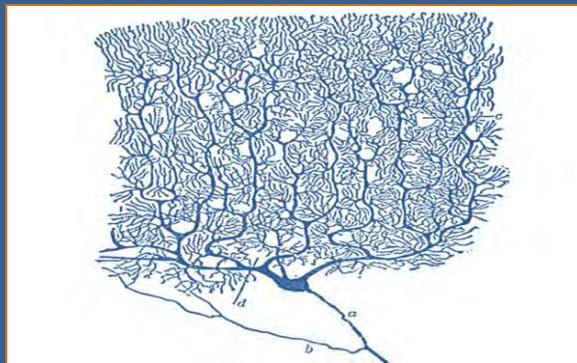
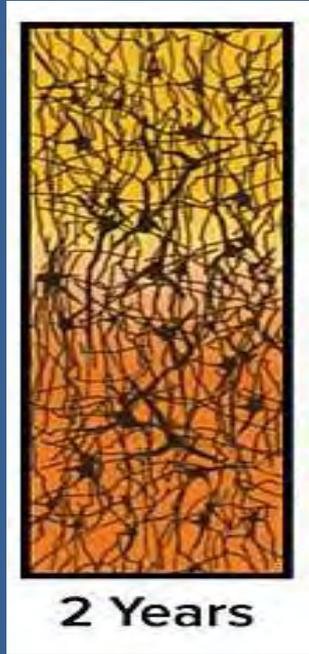


The miracle is that a newborn baby’s neurons develop at an amazing speed - 700 neuron connections in a second and by the age of 6 years, 85 % of brain architecture is formed.

There are 100 ml neuron and 1000 tri connection of synapses already formed In a child's brain, that preserve memory storage.

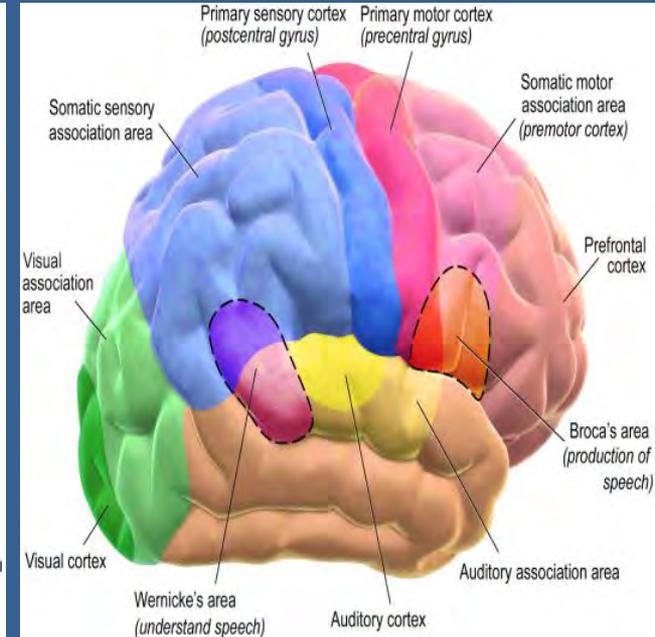
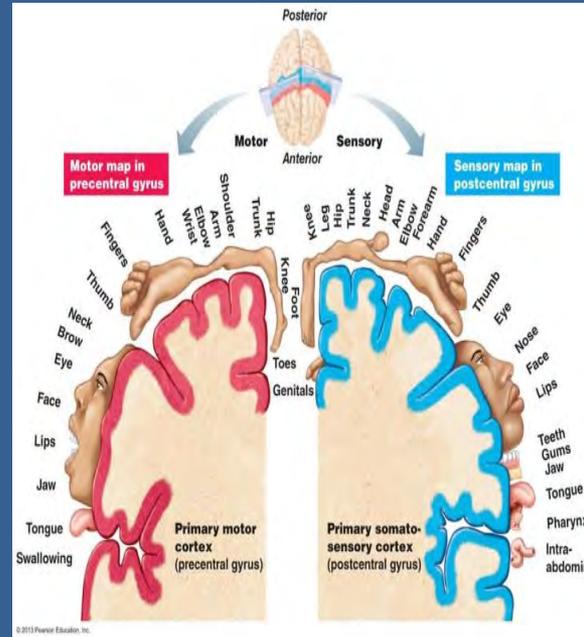
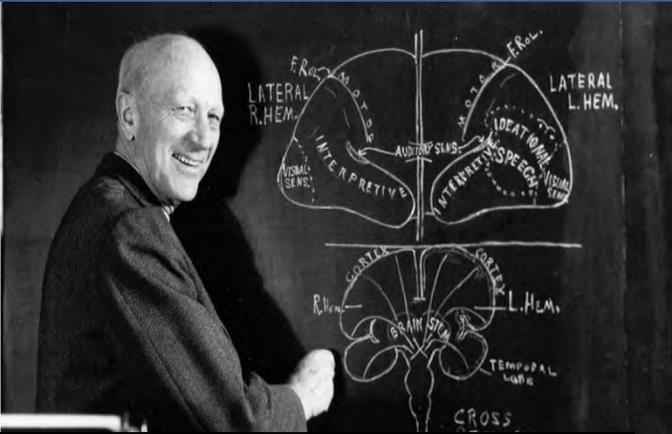
Neuroscience Researches

International researches have shown that pre-school (1-6) age is very important. First 2000 days after the birth are crucially important for the development of a foundation for all children " Brain is like a learning machine "Brain is an wider than the a sky"



Motor-kinesthetic development technique

WILDER PENFIELD, WELL KNOWN AND neurosurgery AND NEURAL CARTOGRAPHER



Kinesthetic skills are closely connected with cognition and speech

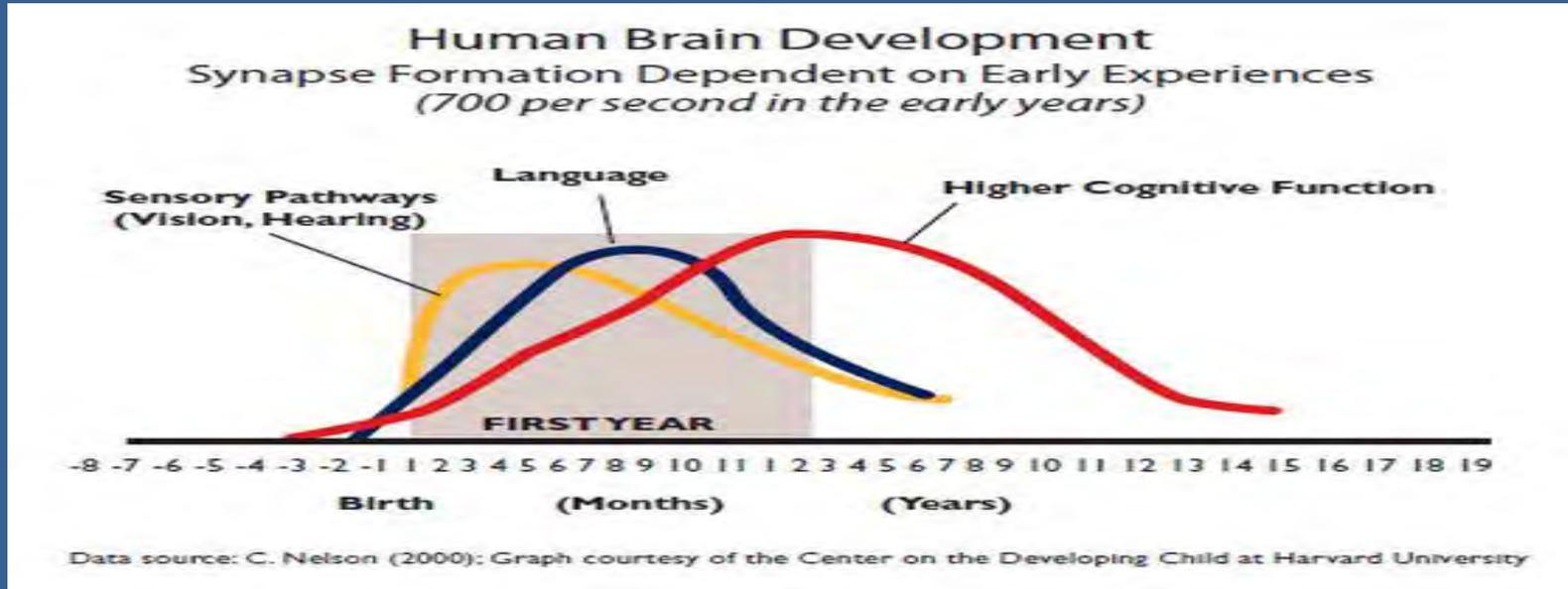
Methodology

Fingers games, shadow theatre, games for fine motor skills development



Neuroscience Researches

Every child comes to this world, completely open to acquire a new information.



- During the first 2000 days after a child birth, brain plasticity is high
- Vision; Hearing; Language structures (Neuron connections) develop very fast, lthough period of development is short
- Without support , brain is actively pruning away (getting rid of) neural connections that are not used. Neuron connections that are used more, grow strong and more permanent Meanwhile , connections that are used less fade away through normal process is called pruning

“ Use It or Lose It“.

It can be said, that compared to a 3 years child, 14 - 18 age children has less neuron connections and it seems that their brain is functioning slower in terms of acquisition of new knowledge. Does it mean that 3 years child is more clever than 14 or 18 years old?

It means, that the neuron connections that are used more, grow strong and more permanent and those that are not used, prune quite soon.

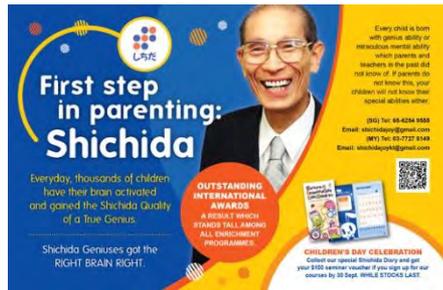
“ Use it, or Lose it“ - this is how this critical age valued by the scientists

It means that a child is born for learning. First 2000 days after the birth and up to 6 years have crucial importance.

Parents, kindergarten teachers even have no idea how they can contribute to the development of learning potential of 2-6 years old children

Children are Born Genius

Children are born genius. We just have to contribute to their development – these words belong to the famous Japanese neuroscientist, the author of early childhood development programs Makoto Shichida



First step in parenting: **Shichida**

Everyday, thousands of children have their brain activated and gained the Shichida Quality of a True Genius.

Shichida Geniuses got the RIGHT BRAIN RIGHT.

Every child is born with genetic ability or neurologic mental ability which parents and teachers in the past did not know of. If parents do not know this, your children will not have their special abilities either.

OUTSTANDING INTERNATIONAL AWARDS
A BRIDGE WHICH SPANS ALL LANGUAGES
ALL ENRICHMENT PROGRAMS

CHILDREN'S DAY CELEBRATION
Celebrate special Shichida Day and get your \$100 savings voucher if you sign up for our courses by 31 Sept. WHILE STOCKS LAST.

SHICHIDA
Makoto Shichida



THE FOUNDATION TO BETTER LEARNING

SHICHIDA
Makoto Shichida



Kindergarten is too late!

From birth to three are the key years for developing your baby's intelligence - don't wait till kindergarten!

MASARU IBUKA
Founder and Hon. Chairman of Sony Corporation

Foreword by Glenn Doman, author of *How to Teach Your Baby to Read*





**Eric Kandel - Nobel Prize Winner
Columbia University Neurobiologist, Psychiatrist, Biophysicist**

“Genes are absolute controllers of our abilities and skills, but its half truth...”

Genes can't be modified, but events in the environment can have profound effects on gene expression and brain anatomy, forcing it to function or not to function.

When a child has no experience in such early ages, genes have an influence of her/his development but early intervention (from the birth day), i.e. external influence such as learning, result in changing of the nervous system.

Data of the Ministry of Education, Science, Culture and Sport of Georgia

School readiness assessment and analyses 2011-2012

The level of children's school readiness competence is low in:

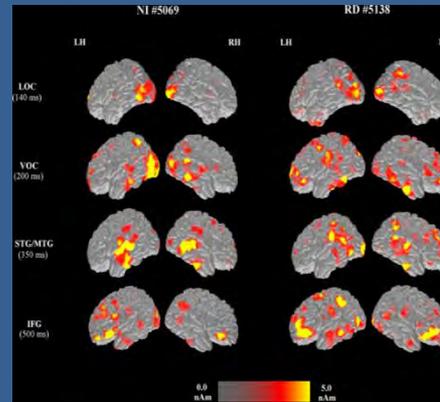
- **Social skills**
- **Speech and communication skills (only 17 % have satisfactorily developed vocabulary)**
- **Memorizing skills (only 18 % have good level)**

Trainings for teachers, stipulated in the recommendations:

- ❖ **Physical development**
- ❖ **Social-emotional development**
- ❖ **Fine Motor skills**
- ❖ **Learning approaches**
- ❖ **development of speech and communication skills, vocabulary**

Neuroscience Education New Technology

Magnetoencephalography “MEG” By MEG 116 aria of brain 4 dimensional images



Patricia Kuhl
Professor of Speech and Hearing Sciences
Institute for Learning & Brain Sciences, UW

Research area

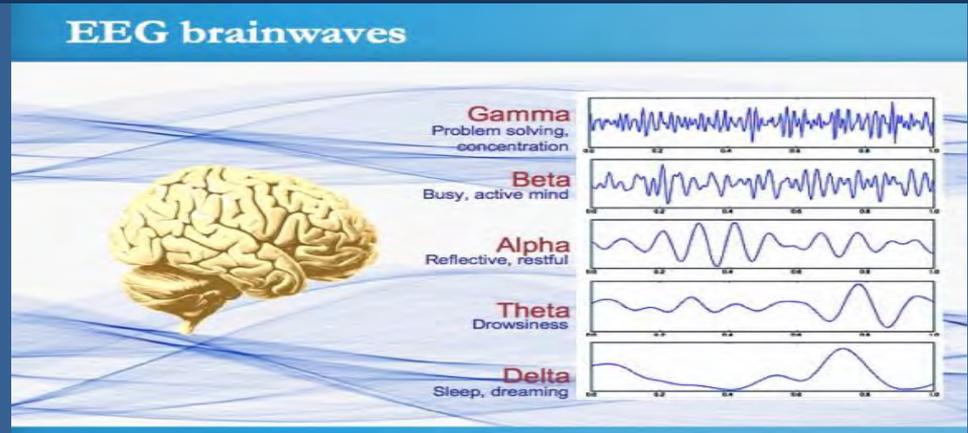
- Early language acquisition
- Audio memory
- Impairment of language development

- “Big Surprises from Little Brains”
- New born child brain starts languages statistic much more earlier before baby start talk

Barriers delaying Children development

Study of Brainwaves of new born children

New Technology electroencephalogram (EEG)

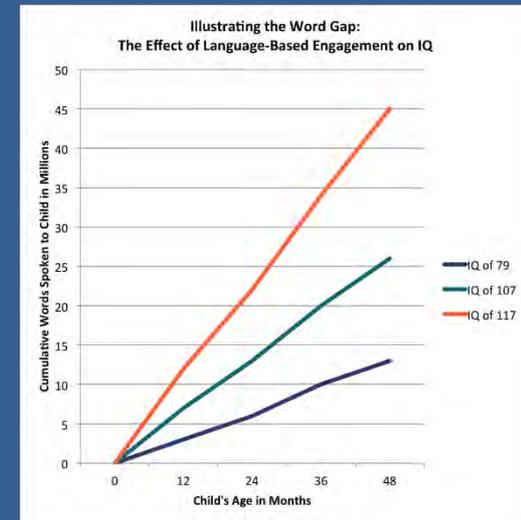
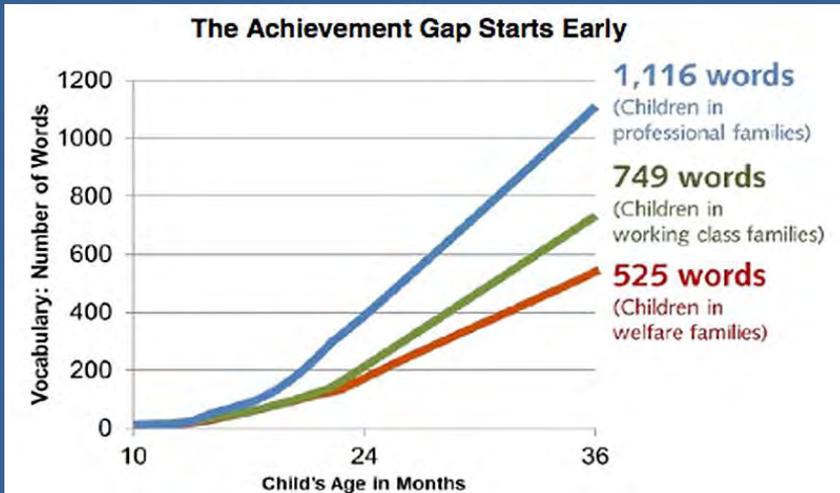


Dr. Paula Tallal and April Benasich Rutgers University Infancy Studies Laboratory at Rutgers University,)

Babies at risk factors (Narcotic or Alcohol Users parent , parents with dyslexia) ...

According to the latest researches of the neuroscientists, children have difficulties in pronunciation of the sounds- ba and da that is a signal of language coding impairment. Difficulties in producing sound in children can seriously hinder language and cognitive development.

Barriers delaying Children development and learning abilities



Vocabulary development differs - children from professional families have 3 times better developed vocabulary than children from welfare families

In vocabulary of children from families with high economic status, every 5-th word from 6 is positive and children from low income families every 4-th word from 6 is negative

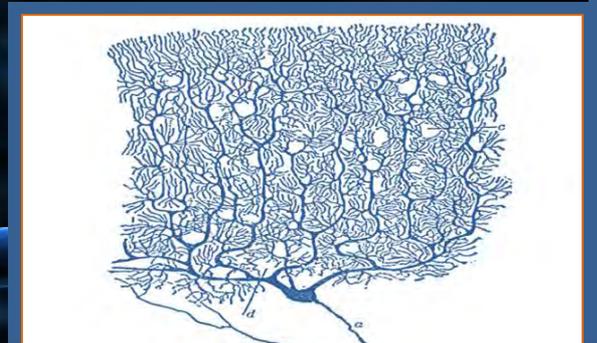
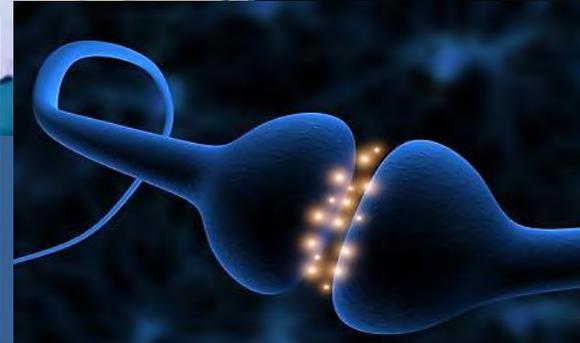
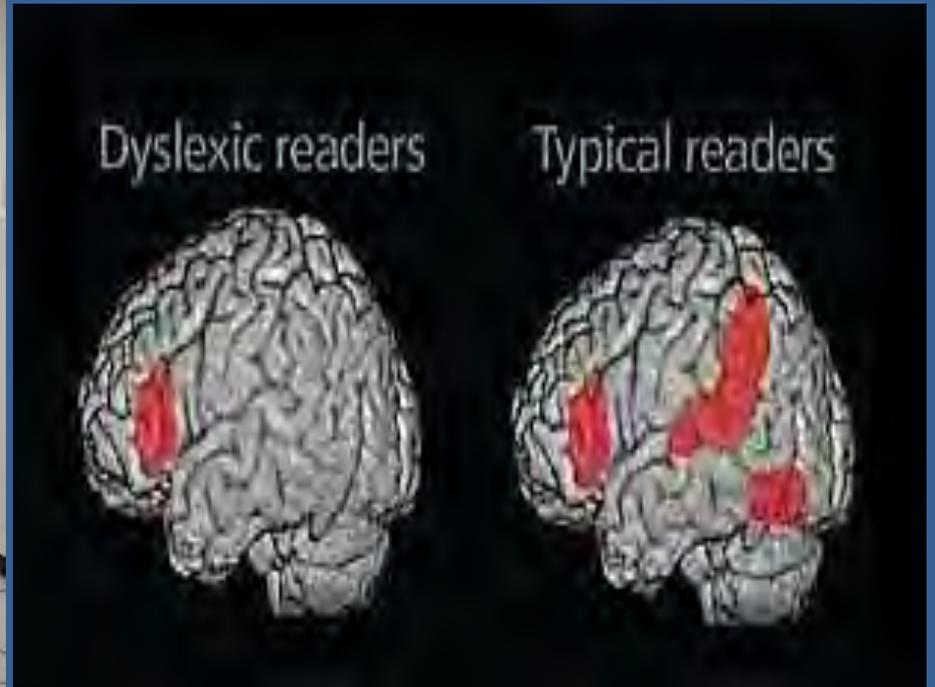
Vocabulary has significant importance for 2-6 year-olds. 85% of those with poor vocabulary unsuccessfully graduate from school.

Of course financial well-being has no direct on vocabulary development, though positive attitudes, parental attention and quality of early education contributes to better development of vocabulary and of a child as a whole.

Functional Magnetic Resonance Imaging

Jack P. Shonkoff Professor of Child Health and Development

[Department of Social and Behavioral Sciences](#) Harvard



Child Development Barriers

What artificial barriers do we create in the development of a child's brain, which is expressed in the way of learning, behavior, mental and mental status?

(Jack P. Shonkoff; Harvard School of Public Health.)

The survey was conducted and concrete negative factors, hindering child's development were identified

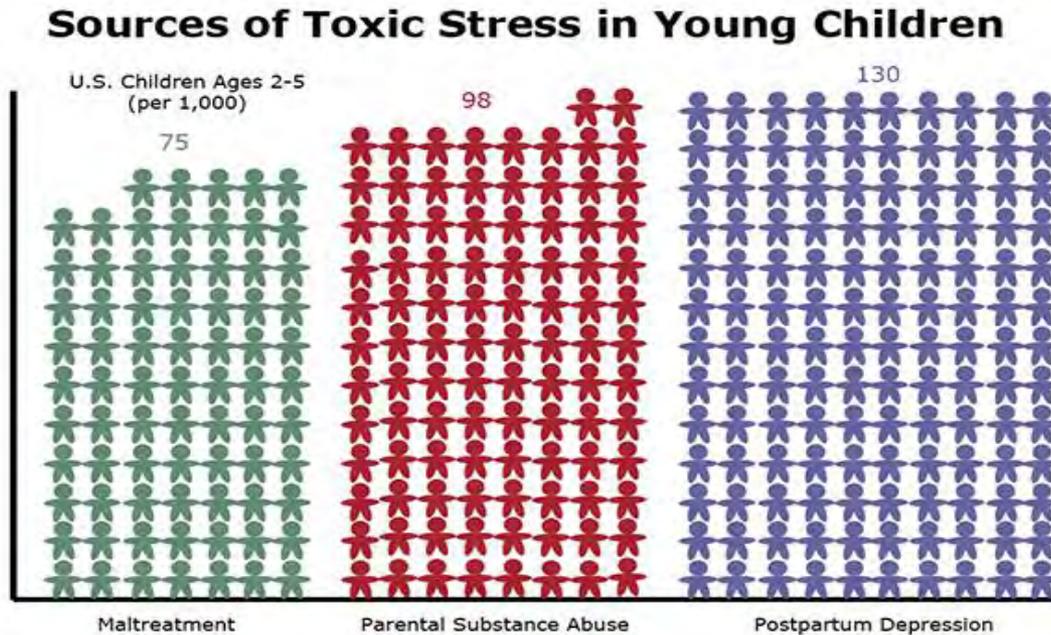
Toxic Stress

Barriers delaying Child development

According to the researches of the Harvard University, one of the factors, hindering child development is a toxic stress. It has a long-term effect that lasts in childhood, adolescence and adulthood .

(Jack P. Shonkoff; Harvard School of Public Health.)

303 from 1000 children were diagnosed with developmental retardation, due to mother's depression, maltreatment - or neglect , parental pressure (violence). (in Georgia there are not comforting picture)



Working memory

(Gina Lee Hoffman) testing results

4-6 age	
Visual memory	Auditory
Impairment 52%	Impairment : 26%
12-17ages	
Visual memory	Auditory
Impairment 78%	Impairment 92%

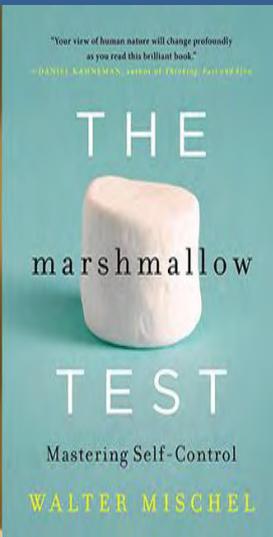
12-17 age students only 8% have good auditory memory

12-17 age students can remember after reading the lesson 26%

The Marshmallow Test: Mastering Self-Control

“Marshmallow test” was conducted by Stanford psychology professor Walter Mischel in the late 1960s and early 1970s. The purpose of the test was to measure children’s ability to delay gratification

In follow-up studies, the researchers found that children who were able to wait longer for the preferred rewards tended to have better life outcomes, as measured by SAT scores, educational attainment, body mass index (BMI), and other life measures.¹



Marshmallow Test Results

Walter Mischel

Within 40 years follow up period, 95 % of children, who failed the test (to say simply, those who couldn't get second marshmallow) appeared to:

have no success in learning and no career development

be drug and alcohol abusers

be overweight

be nicotine users

Marshmallow test was a long-term test, followed by skepticism, cynicism, nihilism, sarcasm, and similar attitudes. Despite this, it is known as one of the important studies, which defined that a child may have or doesn't have self-control and what are the negative consequences of not having for both individual and country economic. Marshmallow test made possible to define the role of the development of self-control and identify a serious problem/ risk, so insignificantly revealing in early childhood.

Working Memory

Working memory is a cognitive system with a limited capacity that is responsible for temporarily holding information available for processing and a mechanism for connecting this new information to the knowledge stored in long-term memory

Testing children's academic performance, attention, thinking and hyperactivity can reveal the low level of working memory development

Working memory has a limited capacity

George A. Miller (Harvard University Professor, one of the founders of cognitive neuroscience). His work "The Magical Number Seven, Plus or Minus Two" have greatly contributed to the study of working memory

Allan Baddley (York University, Professor) The author of working memory multi-component model



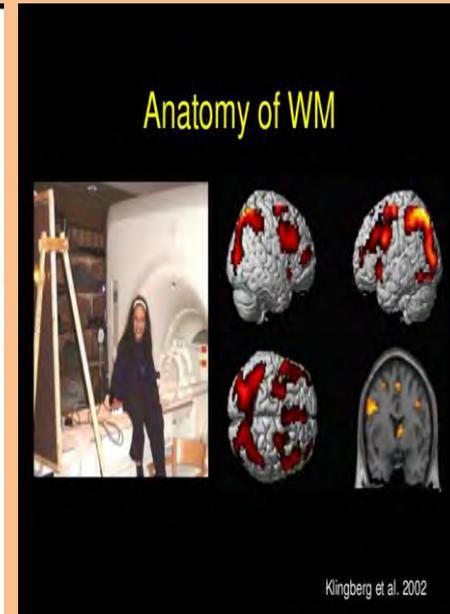
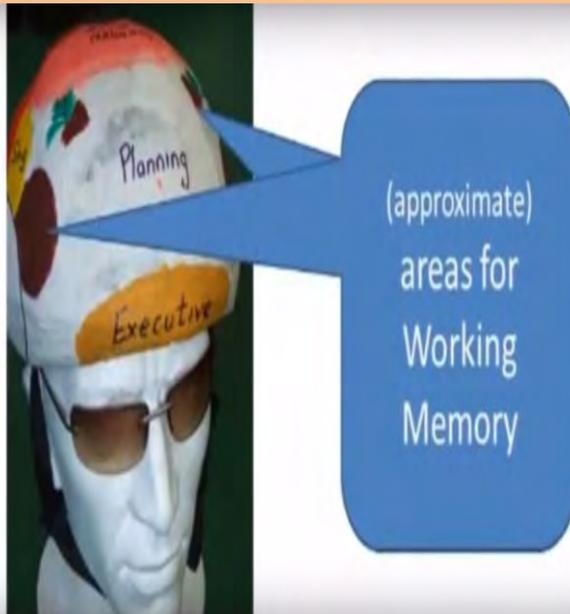
Miller's Magic Number

7 ± 2



THE MAGICAL
NUMBER

7 ± 2

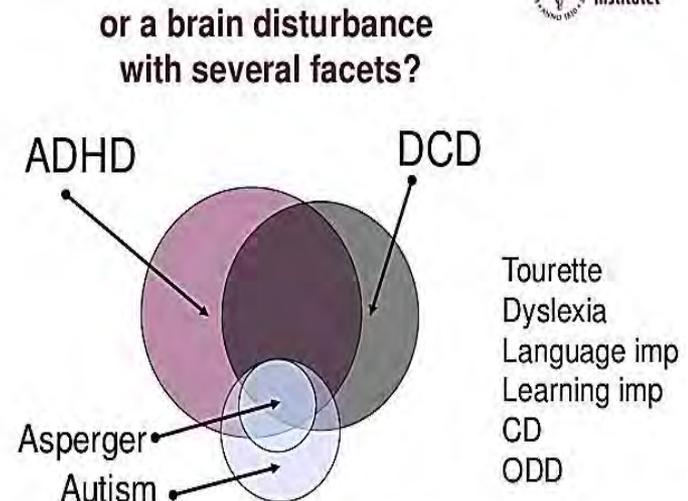


Working memory – Statistics

Children have difficulties in focusing on information to be acquired, remembering the letters, numbers, instructions and rules, practical application of information

ADHD 5-7 %, Autism - 1%, Dyslexia - 3% Language disorders - 5%, Mental retardation 1%, Cerebral palsy 0.2% Coordination disorders 3- 5%; Tourette syndrome – 1 %; Learning disability, mental disorders (Approx. 25-35%)

NEURODEVELOPMENTAL DISORDERS	PREVALENCE
ADHD	5-7 %
Autism Spectrum Disorders	1 % (autism 0.1-0.2)
Dyslexia	3 %
Language Disorders (SLI)	3-5 %
Mental Retardation (MR)	1 %
Cerebral Palsy (CP)	0.2 %
Dev. Coordination Disorder (DCD)	3-5 %
Tourettes syndrome	1 %

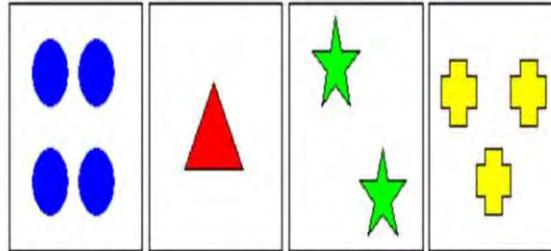


Testing of working memory and developing exercises

Development of working memory prepares children for school. It helps them in remembering letters and numbers, later in acquisition of reading and math skills and practical application of this knowledge.

Both testing and measuring of working memory is very easy

1. Showing pictures (5-9) one by one and asking to list them consistently
2. Showing pictures (5-6) one by one and asking to draw them
2. Showing geometrical shapes and drawing them
3. Showing numbers and writing or drawing them by using sticks



Integration of game-based exercises to the educational programs for kindergartens 5 times a week for 10 min.

20 min. daily different complexity tests during 5 weeks for students with special educational needs (Torkel Klingberg)

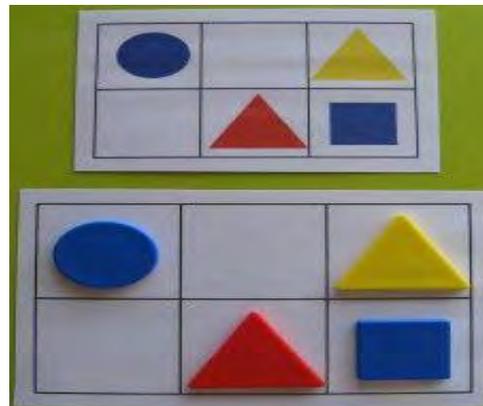
Visual Memory

Once seen is better than heard a hundred times

Visual memory is also called photographic memory as it implies the imagination and storage of visual percept of pictures, drawing, and objects

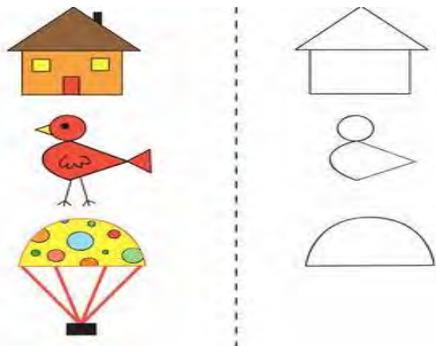
Children percept 80% of information visually, but only their small part uses this possibility fully.

Poor visual memory is a result of problems with the visual perception of information within the visual span, the inability of brain structures that should be addressed at early ages. Children eyes should be trained to simultaneously move, focus and interpret what they see.



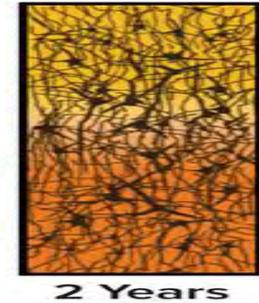
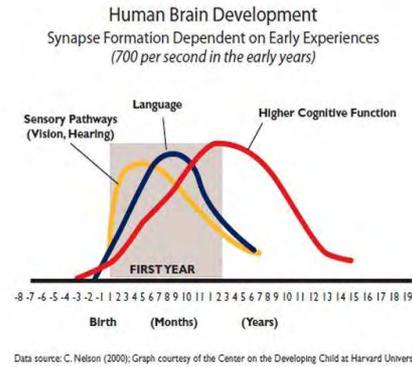
Proposed methodology

1. Memorizing of a visual image and its reproducing on a paper
2. Memorizing of a visual image and its recollection in details
3. A child is asked to look carefully at 4-9 toys different in shapes and colors. Then, he/she closes eyes and a teacher removes/adds one of the toys or changes their places. The child has to detect the change.
4. Different colored magnetic buttons, simple shapes, ornaments and objects are stuck to the board. A child looks at these shapes for 30 seconds and then draws them, in a sequence of their shapes or colors.
5. Small size 4-5 toys or objects are placed in a box. During 5 min. children are busy with other activity, e.g. counting up to five and vice versa. Then they are asked to show where the toys (objects) are.



Auditory memory and auditory impairments

Problems with coding of acoustic form of words



In literature, the second year is referred as "Language Explosion" period. Speaking, reading and writing skills are closely interconnected and actually this is a period when the basis for reading and writing starts formation

In early ages, children have problems in distinguishing sounds (phonemes)
e.g.. P-at R-at; C- at

But this at the one glance insignificant problem has a neurobiological background and in future can become a reason for auditory memory impairment and learning disability

Auditory memory disorder understanding acoustic form of words

Auditory memory – identification of hearing process disorders was started in 1977. According to the latest data, 10 % of cases are identified, but about 18-20 % remain unidentified.

Auditory memory is a brain ability, to filter and interpret sounds; process and discriminate the sounds.

Children may have no hearing impairment but many children have problems in understanding language sound (phonemic) structure

Why do children have problems in distinguishing sounds and perception of phonemic systems?

Each language has phonemic system or a definite number of acoustically different phonemes (sounds) that has significant importance in acquisition of language phonemic system.

Often, 1-4 years old children have problems with “catching” and discrimination of sounds; e.g. ba –da; sa-za; ka-da; ta-da

Later, 5-6 years old children have difficulties in connecting sounds with letters, i.e. in perception of acoustic form of a phoneme and their brain incorrectly interprets the sounds

A word written on a paper is static, the brain should percept it acoustically and process to sounds. While reading, children have problems in understanding of acoustic form of words.

Impaired Auditory Memory

Children with auditory memory impairment can only partially hear what is read and have problems with understanding. Therefore, slow reading makes content non-understandable and finally, reading becomes torture for such children

Has problems with separation of sounds, ignoring of different background sounds and focusing on needed information. Has problems with being in a noisy classroom, debating.

A child gets nervous, angry and prefers to be in social isolation. Silence is more understandable for her/him.

Auditory memory is closely interlinked with and a reading problem and can be treated in early ages

Impaired Auditory Memory

85% of those with auditory memory impairment are unsuccessful in learning

Later, starting from the grades 3 or 4, social, emotional and behavior problems start to be manifested. The cases of ADHD and lack of attention, social unacceptance and isolation from peers, anxiety or over shyness and tiredness also become frequent.

Children with Special Educational Needs demonstrate auditory memory problems (dyslexia, ADHD, ADD)

Impaired auditory memory and prevention of phoneme decoding problem



Preventive method:

Natural stimulation of reading difficulties is immunization

Work on the development of auditory memory starts earlier than children learn writing letters (at the age 2-6)

System of specially developed exercises that serve as a basis for proficient reading

Books for children and software programs based on special methodology

1. Word segmentation :

We show a child a picture with 4 drawings and pronounce their names by sounds:
e-l-e-p-h-a-n-t; c-a-t; d-u-c-k.

The child has to identify the drawing by pronounced sounds and repeat the word.



Initially it is difficult, but gradually the hearing nerve gets used to sounds and the auditory memory developed

Word segmentation is a problems even for adults, e.g. while pronouncing difficult words

P-h-e-n-o-m-e-n-o-l-o-g-y

Those who have problems with segmentation, also have difficulties in reading

Prevention of auditory memory impairment - Methodology

2. Identification and distinguishing of the same and similar sounds

cat, cap; map, hat

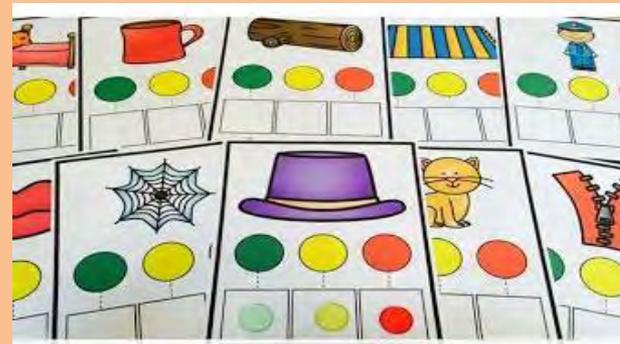
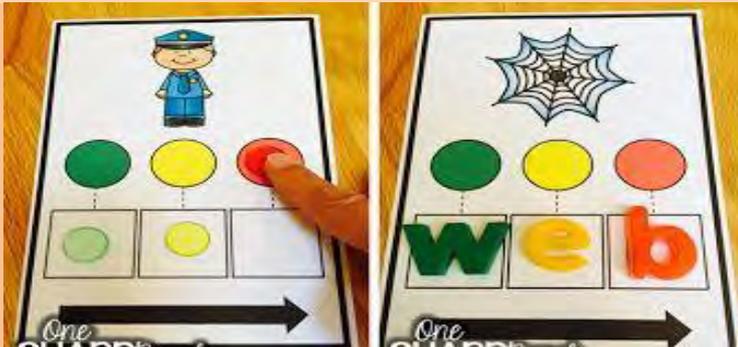
3. Segmentation of one syllable words: dad; boy

4. Changing of the first or last sounds: b-all; c-all; cat, bat, rat; car, cat;

5. Segmentation of two syllable words into sounds; Mon- key; Zeb-ra; Ro-cket;

6. Rhyming

Identification of same vowels – consonants of a syllable

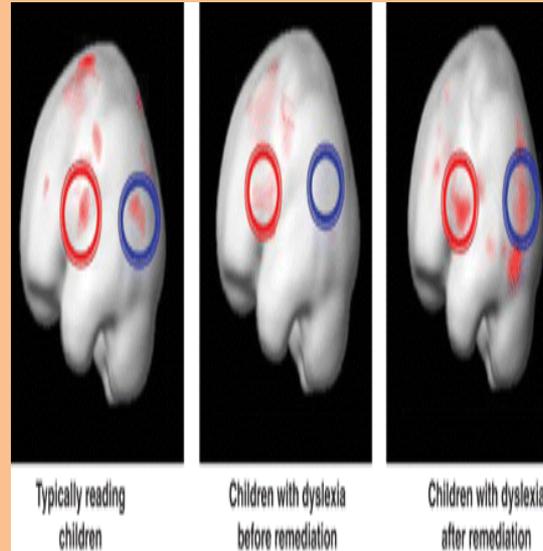


SOFTWARE programs

Auditory memory and (phoneme decoding problem)



Different software programs, phonemic songs, and other computer games, helping the development of children's auditory memory have been developed based on neuroscience researches



Teaching Pyramid





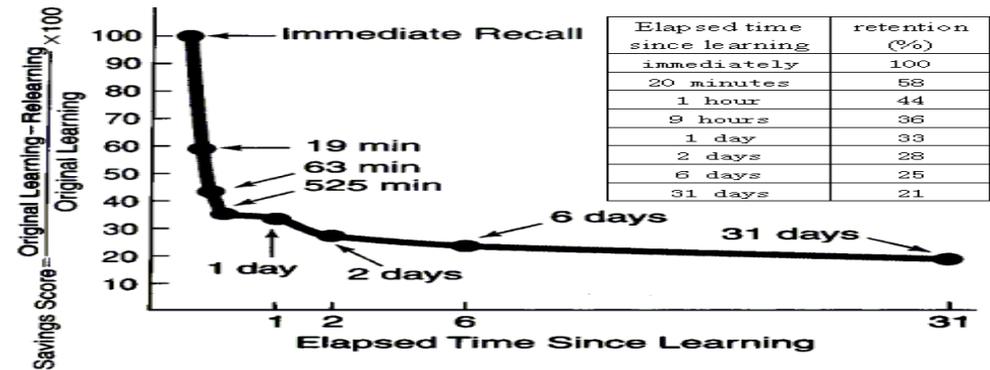
understand why we forget?

Hermann Ebbinghaus

pioneered the experimental study of [memory](#)

Is known for his discovery of the [forgetting curve](#) describe the processes of [learning](#) and [forgetting](#). Vocabulary learning is the foundation of second language learning.

- After 20 minute - 58 % retention
- After 1 hover - 44 % retention
- After 9 hover - 36 % retention
- After 1 day - 33 % retention
- After 2 day - 28% retention
- After 6 day - 25 % retention
- After 1 month - 21 % retention



Methodology of review schedule for learners.
7 simple question

- I - 20 minute after
- II- 1 hover after
- III- 9 hover day after
- IV- 1 day after
- V -2 day after
- VI- 6 day
- VII -31 day

Professor of economy James Heckman
(University of Chicago)
Nobel prize winner in 2000,

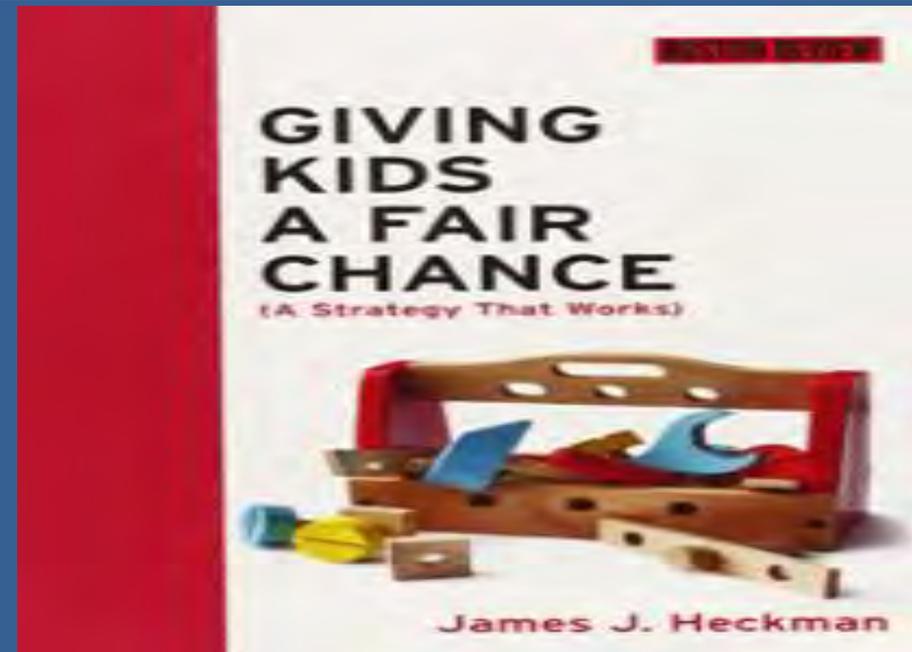
Professor James Heckman speaks about the correlation between the reasons causing an economic crisis and early childhood ineffective education policy. His key message that the “Investment of 16.000 \$ in early childhood education will result in 195000 \$ profit” became an incentive for reforming of an early education system in many countries.



The best way to improve the American workforce in the 21st century is to invest in early childhood education, to ensure that even the most disadvantaged children have the opportunity to succeed along side their more advantaged peers

— James Heckman —

AZ QUOTES



Early childhood development, assistive program “When Learning is Fun”

The program was created in 2014, based on the latest researches of neuroscientists aimed to improve the teachers' skills in using of a new assistive methodology which make the learning processes easier for children.

The program can be easily incorporated to the existing learning program and facilitate the development of child's cognitive mechanisms such as :

Memory ; Attention ; Thinking ;

program is customized for children (at age 2-3; 3-4; 4-5 6-7 ;8-9), contains jolly games and exercises. Its implementation will be carried out in existing educational environments and helps children to development of learning skills, such as:

1. Working memory

2. Supporting technique of reading skills

3. Imaginative (eidetic memory)

4. Motor-kinesthetic development technique

5. Social skills and self regulation

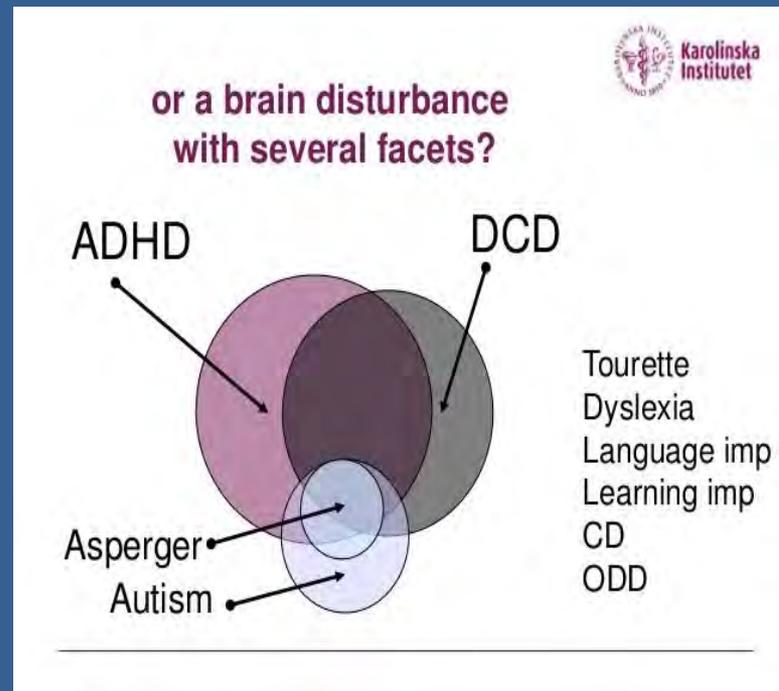
Working Memory

As a result of testing children with learning difficulties, dyslexia and ADHD, low level of working memory is often identified. Such children have problems with attention, concentration, memorizing of letters, numbers, instructions, rules, social skills, and their practical utilization.

Working memory contains three components :

- A) Concentration
- B) Visual - Photographic memory
- C) Auditory memory

NEURODEVELOPMENTAL DISORDERS	PREVALENCE
ADHD	5-7 %
Autism Spectrum Disorders	1 % (autism 0.1-0.2)
Dyslexia	3 %
Language Disorders (SLI)	3-5 %
Mental Retardation (MR)	1 %
Cerebral Palsy (CP)	0.2 %
Dev. Coordination Disorder (DCD)	3-5 %
Tourettes syndrome	1 %



To develop working memory skills

Contribute to the development of Concentration and Visual --
Photographic memory will be developed special games and exercises

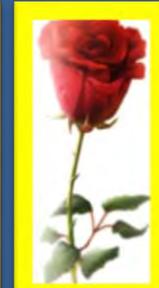
Memorizing of a visual image and its recollection in details

➤ Identification differences

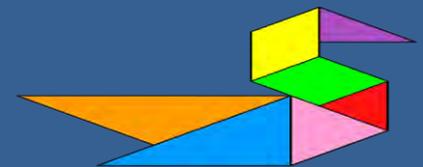
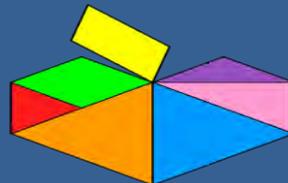


➤ Chain method - developing a story by using 3-9 pictures

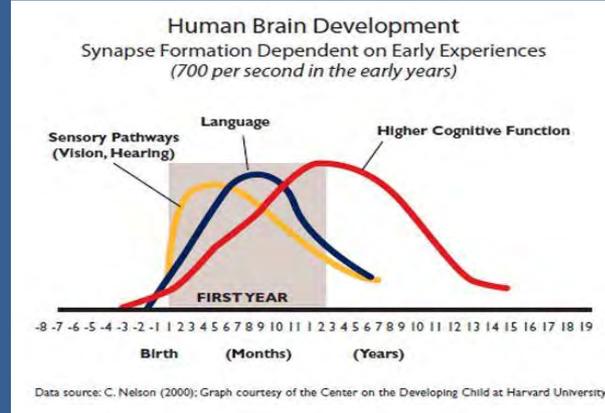
Aunt Ana



Play with TANGRAM . Contains 7 triangles , 1 Square, 1 parallelogram) 6500 different figure



Auditory memory and auditory processing problems – problems with acoustic coding of word



According to the latest researches of the neuroscientists, difficulties in sound producing in children can seriously hinder language and cognitive development. At the same time, vocabulary has significant importance for 2-6 year-olds. 85% of those with poor vocabulary unsuccessfully graduate from school.

Methodology - Phonemic awareness

1. Word segmentation

E - l - e - p - h - a - n - t ;



C - a - t ;



D - u - c - k



Methodology - Phonemic awareness



ღათვი



ტაქსი



ღათვის
ტაქსი

3

სანი



შაშვი



სანი
შაშვი



მამალი



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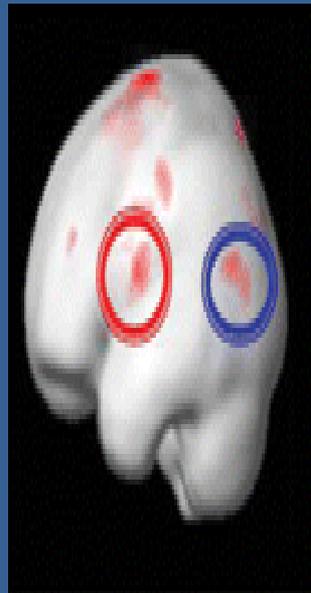
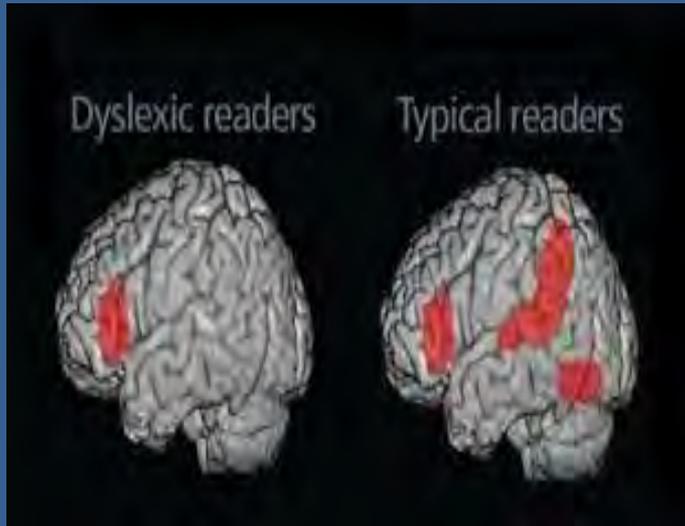
Rhyming:

1. Cat , bat, rat
2. Pig , fig , dig ,jig

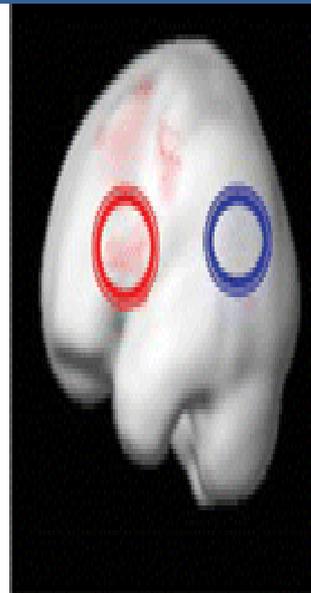
Assistive Soft programs



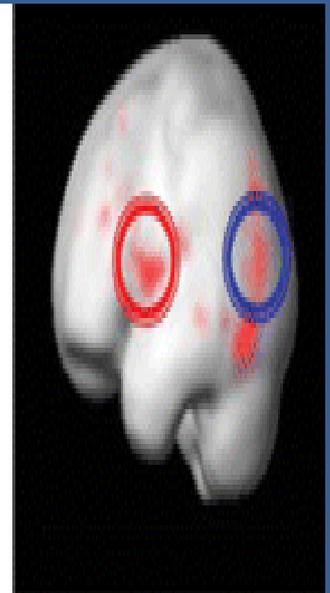
Assistive soft programs are effective for Dyslexia, ADCD, auditory disorders and other learning difficulties



Typically reading children



Children with dyslexia before remediation



Children with dyslexia after remediation

Reading skills supporting technique



First, children learn reading and then learn by reading.

Children develop reading technique at pre-school age and then use reading for acquiring knowledge and experience for future success.

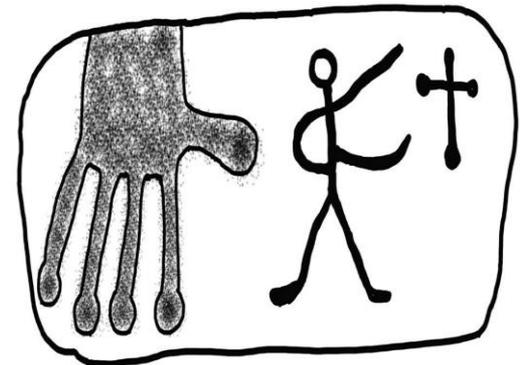
Reading Difficulties

Connecting objects with written symbols (letters) Big gap between concrete and abstract information

Written system is comparatively new system, but there also existed ideogram or idiographic system, representing an idea or concept in pictures – drawing.

Pictogram – is an ancient method of presenting a concept in drawing. Pictographs were used as the earliest known form of writing, examples having been discovered in Egypt and Mesopotamia from before 3000 BC.

Both hemispheres of the brain contain a visual cortex; the visual cortex in the left hemisphere receives signals from the right visual field and fixes on a subject and the visual cortex in the right hemisphere receives signals from the left visual field and fixes on subject location .



Reading barriers

Gap between the concrete (object) and abstract (written symbols) information

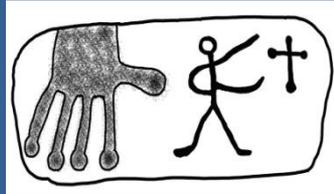
Concrete

abstract



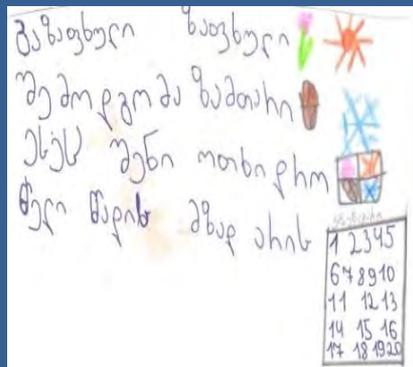
C-A-T

A-T-C T-A-C



considers establishing of correlation between the objects and the written symbols (written word); the method of expression of a concept idea by drawings. It is easy for the brain, to perceive informational pictures-drawings.

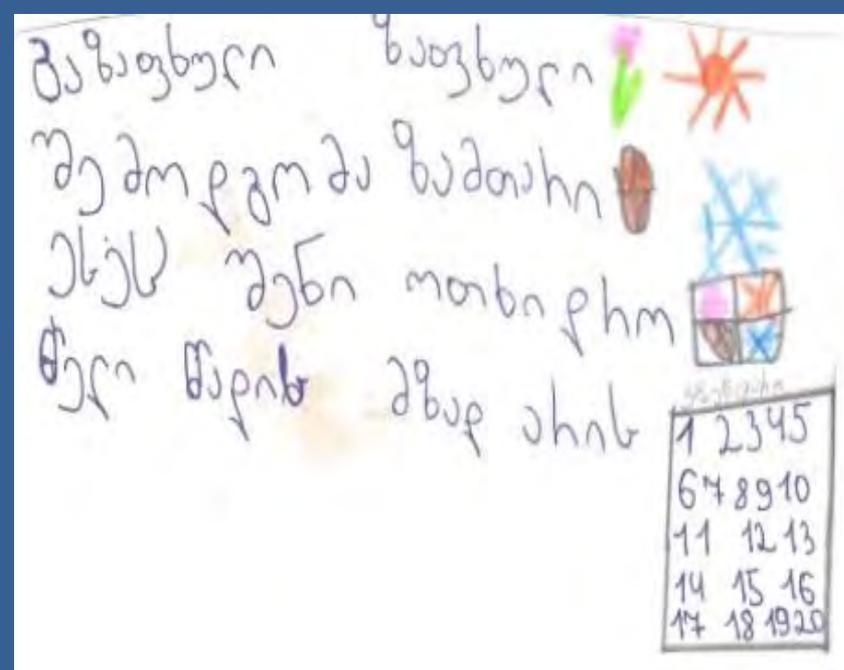
By using pictograms, children easily remember the rhymes and stories and at the same time, they are more focused on the learning material.



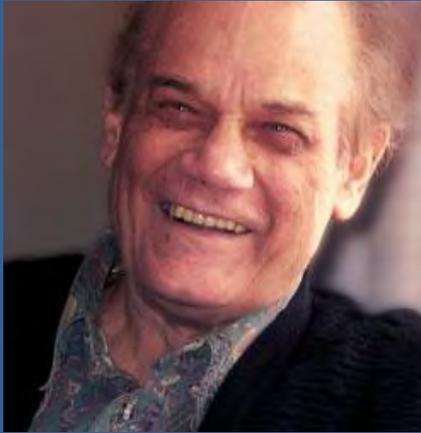
Pictogram method – is an ancient method of presenting a concept in drawing.

The brain easily gets information from informational pictures-drawing and helps children in remembering rhymes and stories

Drawing involves visual, cognitive and motor skills This process facilitates maximum fixation on a material to be acquired



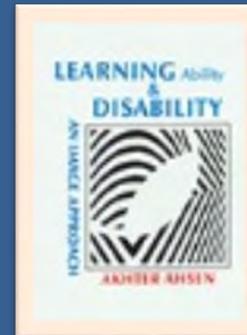
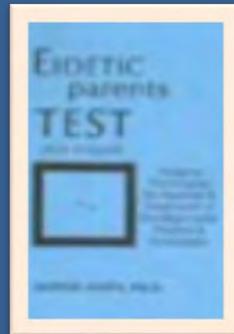
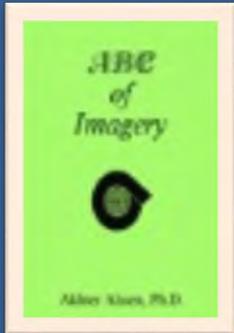
Imaginative skills (Eidetic memory)



Akhter Ahsen – one of the most influential theorist of imaginary psychology. Member of the US Association of Psychologists; Founder of the Association of imaginary psychology; the author of more than 30 books, huge number of scientific articles and publications. Ahsen's work in imagery, specifically the eidetic image, began in the 1950's and has continued through this new millennium. He was one of the pioneer of introducing imaginative memory to the educational system.

Publications: ABC of Imagery, Eidetic parent test, Guided imagery and education, Imagery and Imagination in Education, Learning Ability and Disability: An Image Approach

The studies showed that successful persons, scientists, innovators have well developed imagination skills (4 %)



Imagination Memory

➤ At school age children Imaginations reduce and replace Logical thinking.

Information acquiring by managed imagination technique.

Animation of objects (e.g. Lime - using color, smell, taste, tactile senses- (managed imagination tactic)

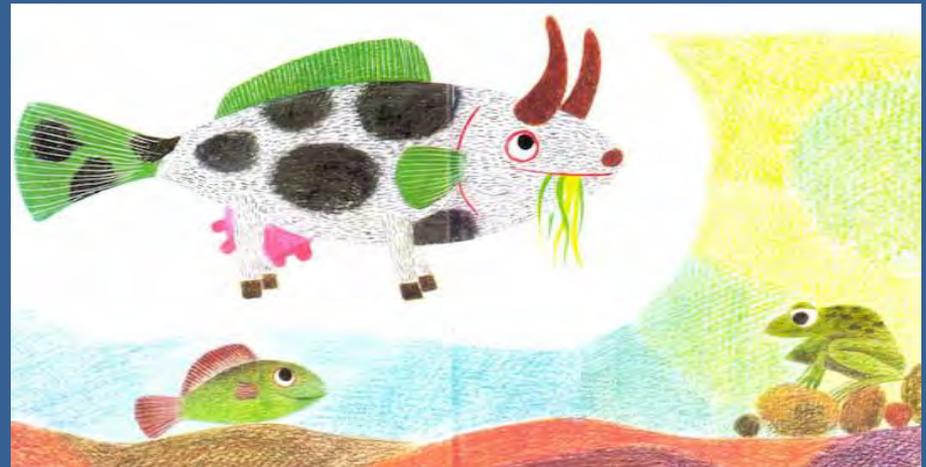
Development of a story (3-10 words) by listing the words (4-10 words)

E.g.

River; duck; eyes; house; rose; cat; notes



"Frog is Frog" and "Fish is Fish" and that is that!



LEO LEONE FISH IS FISH

Associative Method



Richard Atkinson

Cognitive Psychology Professor, Stanford University Honorable Member,
National Education and Science Association Honorable

In 80-th, Atkinson was actively studying human memory and its function in educational process
His phonemic association imaging theory is also widely used in learning foreign languages
http://rca.ucsd.edu/selected_papers/12_Mnemotechnics%20in%20second%20language%20learning.pdf

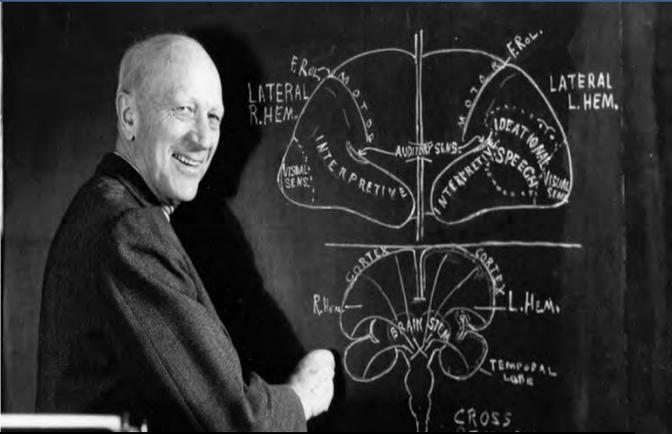
➤ Coin -grass Coin – in in the grass



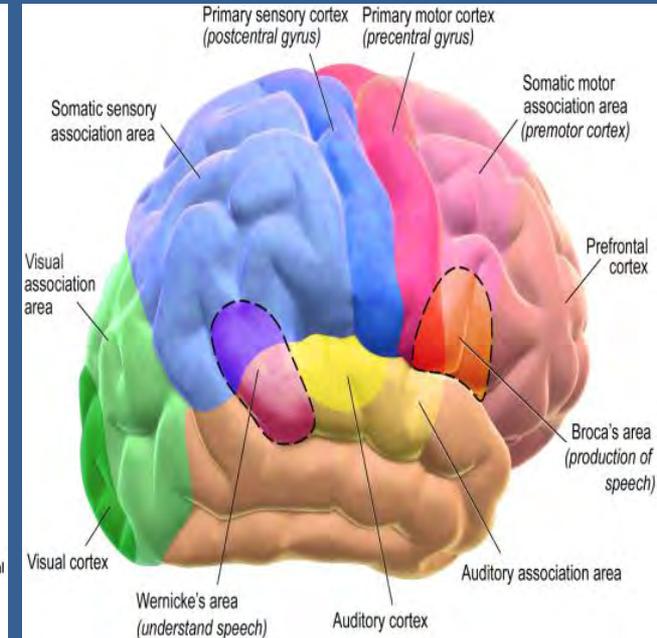
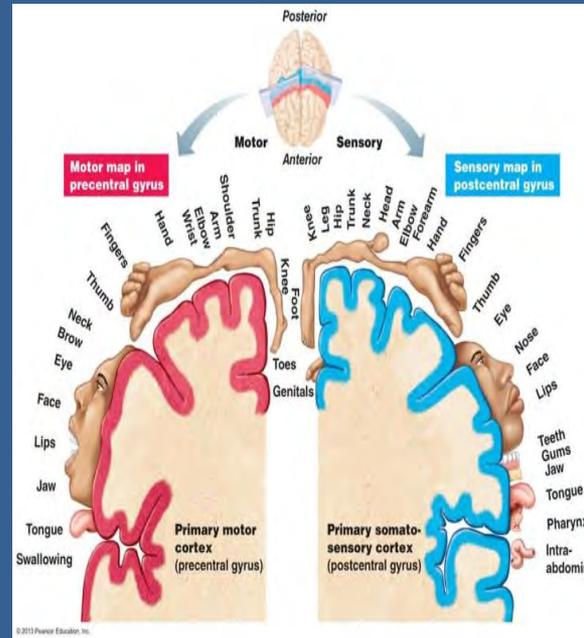
➤ Boat – bottles are in a boat



Motor-kinesthetic development technique



WILDER PENFIELD, WELL KNOWN AND neurosurgery AND NEURAL CARTOGRAPHER



Kinesthetic skills are tightly connected with cognition and speech

Methodology

Fingers games, shadow theatre, games for fine motor skills development



Physical activities:

Physical exercises positively affect toxic stresses. One of the factors, hindering child development is a toxic stress. Quite often, children were diagnosed to developmental retardation, due to mother's depression, parental pressure, violence or neglect. By physical exercises, stress hormone – Cortisol is being utilized. Methodology Games and physical exercises for kinesthetic and motor balance skills development.



According to the studies

According to the studies, preschool education institutions fail to fulfill the role of the center of children's physical and educational development and school readiness
55% of children under 3-6 age go to kindergartens;

50% of kindergartens do not have illustrated books, early learning toys and visual learning materials;

The kindergarten teachers have no access to qualification improvement courses and comprehensive educational resources;

Children's competence for school readiness is low in such areas as social skills, vocabulary, pre-reading skills, concentration, and self-control;

Quality of preschool education is largely stipulated by a teachers and caregiver qualification (Barnett, 2003; Whitebook, 2003)

<http://www.mes.gov.ge/content.php?id=5011&lang=geo>

National Curriculum and Assessment Center

The Institute of Social Studies and Analysis 5 years readiness

Nevertheless, kindergartens in Georgia are perceived more than a form of social assistance, rather than an educational institution, then the primary stage of the integrated educational system.

Preschool educators' qualification and quality programs are especially valuable for our reality.

According to the studies

Preschool education in Georgia is decentralized and local municipalities are in charge of funding. In previous years local municipalities prioritized infrastructural and safety projects and nothing was done in relation to the enhancement of teachers and caregivers' professional qualification.

In 2017, Georgian government approved the standards of professional qualification of teachers, which stresses the importance of retraining of teachers and the introduction of new educational technologies.

The Ministry of Education and Science of Georgia set up Preschool Education Development Department aimed to identify the problems in the preschool education sector.

Nevertheless, there is still a lack of evidence-based pilot projects directed at the improvement of teachers expertise in new teaching technology

Implemented projects



Trainings in Association "Anika"

2-days training for children with special educational needs and their teachers have been conducted in the Association "Anika"

The 3-months training course was conducted for convicted juveniles in # 11 penitentiary rehabilitation institution for juveniles



Trainings were conducted for teachers (mathematics, Georgian as a second language) of Tbilisi and regional public school teachers. Conducted practical work showed that lessons became significantly interesting and creative and joyful. Children became more creative in the process of acquisition of learning material.



Common National Initiative - Movement for Public Awareness

Social video clip was created with participation of celebrities sportsmen, actors and singers

“Talk to your baby” – “Read to your baby 15 minutes”

